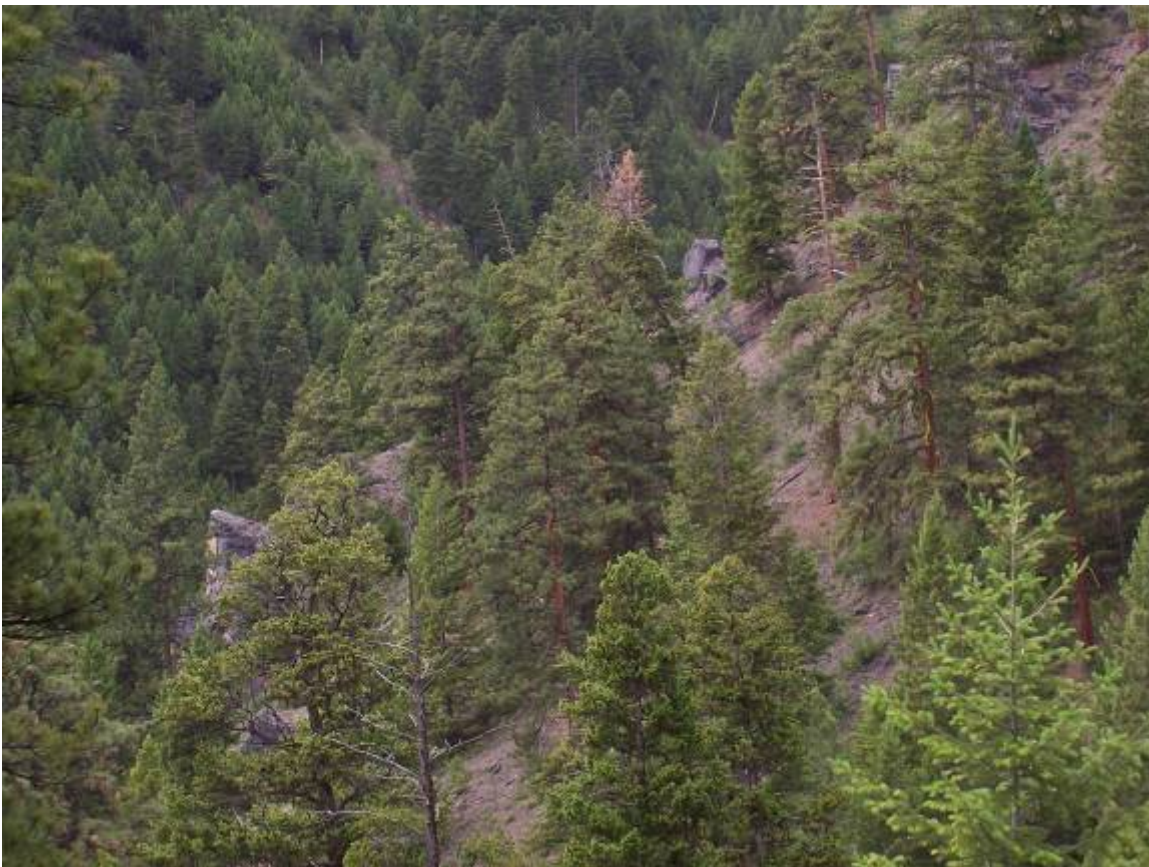


BUGCHUCK SALVAGE
TIMBER SALE
ENVIRONMENT ASSESSMENT

MONTANA DEPARTMENT of NATURAL RESOURCES and CONSERVATION
SOUTHWESTERN LAND OFFICE
CLEARWATER UNIT

MARCH 2008



BUGCHUCK SALVAGE TIMBER SALE ENVIRONMENTAL ASSESSMENT

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CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Bugchuck Salvage Timber Sale
Proposed Implementation Date:	Summer 2008 through Fall 2009
Proponent:	Clearwater Unit, Southwestern Land Office, Montana D.N.R.C.
Location:	Section 6 T.14N. R.14W., Section 30 T.15N. R.14W., Section 36 T.15N. R.15W., P.M.M
County:	Missoula County

I. TYPE AND PURPOSE OF ACTION

The Montana Department of Natural Resources and Conservation (DNRC) proposes to harvest an estimated 400 to 600 thousand board feet (MBF) of lodgepole pine from approximately 200 acres. Other species would not be targeted for harvest unless they occur in skid trails, landings, or adjacent to roads where they would need to be removed. New road construction is planned to access the sale area. Receipts generated by this proposal are estimated to yield between \$30,000 and \$80,000 for the State Industrial School and Common Schools Income. Proposed harvest treatments would salvage lodgepole pine, and decrease the spread the mountain pine bark beetle (*Dendroctonus ponderosae*). Roads and landings used by this sale would be treated with herbicide to control noxious weeds. Fuels management of slash created by this project would also be a part of this project.

The objectives of the project are to:

- 1) Salvage dead and dying timber before it loses its economic value,
- 2) Reduce the susceptibility of residual trees to epidemic insect infestations,
- 3) Reduce potential fuel concentrations after harvest,

The lands involved in this project are held by the State of Montana in trust for the support of specific beneficiary institutions such as public schools & state colleges (Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X, Section 11). The Board of Land Commissioners and Department of Natural Resources and Conservation (DNRC) are required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for these beneficiary institutions (Section 7 –1–202, MCA). In 2003, the DNRC adopted Administrative Rules for Forest Management ARM 36.11.401-36.11.450 (the "Rules"). This project is planned and developed in accordance with the Rules.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project.

This timber sale was scoped in the Missoulian (Missoula, MT.) during May and June of 2007. Notices were posted at the Clearwater Junction, MT., on the DNRC website, and the DNRC office in Clearwater. The normal scoping list was also used to elicit input from the public and other agencies (in Bugchuck Salvage sale file). Responses from the Montana Department of Fish, Wildlife, and Parks (DFWP), the WildWest Institute, and Stoltze Land and Lumber are included in Appendix D. Department of Natural Resources and Conservation specialists such as a wildlife biologist (Mike McGrath), hydrologist and soil scientist (Jeff Collins), and archeologist (Patrick Rennie) were also scoped and have provided important information for this Environmental Assessment.

Craig V. Nelson, Clearwater Unit Forest Management Supervisor, has written the E.A. and Steve Wallace, Unit Manager of Clearwater Unit will be the decision maker.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

The Blanchard Creek road is owned by Missoula County and they control weight limits and potential haul dates

3. ALTERNATIVES CONSIDERED:

No Action

The mountain pine bark beetle epidemic would likely continue, possibly infesting and killing the majority of lodgepole pine trees within the section. These beetles could also infest and kill ponderosa pine trees. No new road would be constructed and no existing road would be improved to meet Montana Best Management Practices guidelines. Substantial value would be lost by not salvaging the trees that have already been attacked by beetles, allowing the remaining live lodgepole pine and Douglas-fir on the section to succumb to bark beetle attack. Recreational use permits and grazing leases would continue.

Action

This action alternative would harvest an estimated 400 to 600 MBF of trees from approximately 200 acres. DNRC would salvage trees killed or infested by mountain pine beetle (*Dendroctonus ponderosae*) and all other lodgepole pine within the harvest units would be cut due to the high likelihood of beetle attack. Approximately 2.5 miles of new forest road would be constructed to access the proposed harvest areas and approximately 8 miles of road would be improved or maintained to meet Montana Best Management Practices. Following the proposed harvest the 0.25 miles of road would be closed and be allowed to revegetate naturally. Gates and road blockages would be used to restrict access into the roads from Plum Creek that provide entrance into section 36 south of Blanchard Creek. Other new construction is an extension of a DNRC road system that is currently gated. All logging slash would be piled in the forest using skidding equipment and would be burned away from road systems. Herbicide application would take place to help manage noxious weeds.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

Geology is Belt series, argillites and quartzites bedrocks which are exposed along Woodchuck Canyon and Blanchard Creek. These fractured bedrock materials can be ripped where exposed and are good to excellent quality for roads. There are talus slopes in Woodchuck Canyon, but otherwise no especially unique geology or unstable slopes features are present.

Soils in the Blanchard Creek harvest units are mainly high rock content, well drained soils derived from bedrock residuum, cobbly outwash, and glacial tills. Dominant soils in proposed harvest units 1, 4, & 5 are Glaciercreek and Winfall deep cobbly gravelly loams and gravelly silt loams on 0-30 % slopes. These soils are well drained, with low to moderate erosion, compaction and displacement potential. Soils in unit 3 have similar suitability with deeper volcanic ash surface soils on moderate slopes of 8-30% that are subject to rutting if operated on when wet. Approximately 20 acres of units 1 and 2 on Mitten/Courville glacial tills that are cobbly silt loams with spotty volcanic ash surfaces have similar moderate potential for erosion, compaction and displacement with timber harvest operations. Localized areas of slopes over 45% have and an increased potential for displacement.

Previous harvest was over 50 years ago and all stands are fully stocked with only localized past impacts estimated at less than 5% of the area in main skid trails and landings. Only unit 3 has had no previous harvest effects. With no action, forest soils would continue to ameliorate, yet road segments with inadequate drainage or vegetative cover may continue to erode.

With the proposed action, planned harvest and ground skidding operations should have low risk of direct, in-direct and cumulative impacts based on implementing BMP's and mitigation measures. Ground based harvest would be limited to slopes less than 45% to prevent excessive disturbance. Mitigations (see appendix) include season of use limits to prevent rutting and compaction, skidding plans to limit area of impacts, retaining woody debris (Graham et.al 1994) for nutrients and prompt revegetation of disturbed sites on roads to control erosion and protect soil resources.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

The proposed DNRC lodgepole salvage sale is located within the Blanchard Creek and Woodchuck Canyon drainages that are tributary to the Blackfoot River. Blanchard Creek is a Class 1 perennial stream with a drainage area of 17,494 acres, up to 85 acres is proposed for harvest on DNRC lands. Woodchuck Canyon drainage is an ephemeral drainage of 3,129 acres (136 acres proposed for harvest) with no direct delivery to streams or the Blackfoot River, due to the coarse rocky soils. A DNRC hydrologist completed a coarse filter screening for cumulative effects Per ARM 36.11.423 (1) (a-b) for this proposed timber sale, including past timber harvest projects (DSL 1987, DNRC 1999) and roads for cumulative effects assessments.

Blanchard Creek is a 13.1 mile long drainage that flows through DNRC Section 36, T15N, R15W and Section 31, T15N, R14W in the lower portion of the watershed. Blanchard Creek is a forested watershed with a range of 18-40 inches precipitation, mainly as snowfall. Main Blanchard Creek (below the confluence of the North and South Forks) is listed as impaired (Montana DEQ 2006 303(d) listing) for partially supporting aquatic life and cold water fisheries. The impaired reach is 2.3 miles in length. Probable causes of impairment are alteration of stream banks, sedimentation and low flow alterations. The probable sources are grazing in riparian areas, road adjacent to stream channel, and irrigation diversion of flow which can result in dewatering lower 1.1 miles. Existing cumulative effects include 1)grazing impacts along stream channels and 2)substantial timber harvest within the Blanchard Creek watershed that has lead to moderately high water yield increases. Stream channel conditions on the mainstem of Blanchard Creek are predominately fair to good, with some poor stream reaches in locations sensitive to grazing pressure.

A water quality restoration plan has been drafted for the Middle Blackfoot (including Blanchard Creek) by Montana DEQ that recommends BMP implementation for grazing, and forestry, with the goal to reduce pollution by a specified amount (Total Maximum Daily Load) so that the water resources can fully support all beneficial uses. DNRC installed fencing on the north Fork of Blanchard Creek in 1997 to reduce cattle access to the stream and shrub cover is on an improving trend. Plum Creek has also commenced riparian fencing to reduce livestock use near Blanchard Creek.

Segments of the existing roads within the watershed, including the Blanchard Creek county road and private access roads, require maintenance or repairs to meet BMPs for adequate road drainage. The main Blanchard Creek county road is located adjacent to the stream in Section 31 and segments of the road were reconstructed slightly upslope in the late 1990's to reduce effects of flooding, yet some sedimentation continues.

No Action

Under the No Action Alternative, no man made changes would occur within the project areas. Thus, there would be no change in effects over the existing condition to water yield or quality within the drainages mentioned above. Implementation of BMP's and restoration plans are expected to develop an improving trend for water quality.

Action

The proposed project would use existing roads, and construct new road on moderate grades. Approximately 1 ½ miles would be located within the Blanchard watershed and well away from Blanchard Creek with extensive vegetative buffer distance. The access routes would use the existing stream crossings of Blanchard Creek are not sediment sources or fish barriers. Roads would be graded and drainage repairs completed on access routes as needed to meet Best Management Practices to minimize the risk of additional sediment delivery from occurring during access and hauling of DNRC timber. The proposed project would improve existing road drainage, which would reduce sediment and improve water quality compared to no-action. All new roads and landings would be stabilized by slashing, installing drainage where needed and grass seeded to prevent erosion.

Proposed harvest units 1 & 2 have boundaries that parallel Blanchard Creek and include Streamside Management Zones that meet or exceed the buffer distances required in the SMZ ARM for State Forest Land Management. No harvest is proposed within the first 50 feet of the Blanchard Creek SMZ. Selective harvest would occur within a few short segments of the Riparian Management Zone, which extends from 50 feet to 100 feet away from the stream. Consequently, a low risk of sedimentation, or effects to stream shading or potential large woody debris (LWD) recruitment is anticipated to this stream. Unit 3 is located on upper slopes of Woodchuck Canyon and includes a wetland swale and approximately 100 yards of discontinuous stream with no connectivity to any off-site, downslope water resources. Unit 3 would include one road crossing of a Class 3 SMZ that has low risk of erosion or off-site sedimentation. No surface water is located within or adjacent to proposed units 4 & 5. The proposed salvage harvest would retain Douglas-fir, western larch and Ponderosa pine, which is approximately 30% or more of the existing basal area as a clumpy distribution. Harvest of dead, dying and trees at high risk for mortality due to insect infestations is not expected to generate measurable levels of additional water yield than would be expected under no action. The proposed harvest is a very small (less than ½ %) area compared to the watershed.

Based on implementation of BMP's mitigation measures, the very small area of harvest compared to the watershed area, and improvements to existing road drainage there is low risk of direct, in-direct or cumulative effects to water quality or downstream beneficial uses with the proposed action.

6. AIR QUALITY:

What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

The DNRC is a member of the Montana/Idaho Airshed Group which was formed to minimize or prevent smoke impacts while using fire to accomplish land management objectives and/or fuel hazard reduction (Montana/Idaho Airshed Group 2006). The Group determines the delineation of airsheds and impact zones throughout Idaho and Montana. Airsheds describe those geographical areas that have similar atmospheric conditions, while impact zones describe any area in Montana or Idaho that the Group deems smoke sensitive and/or having an existing air quality problem (Montana/Idaho Airshed Group 2006).

The project areas (Sections 6, 30, and 36) are located within Montana Airshed 3B which encompasses portions of Missoula and Powell Counties. Currently, this Airshed does not contain any impact zones. These sections are located approximately 3 miles west of Clearwater Junction and are bordered by either DNRC or industrial timberland (owned by Plum Creek Timber Company). Numerous residential properties are found to the east of this proposed sale along Highway 200 and Blanchard Creek Road. Two designated wilderness areas lie 15 to 25 miles north and northeast of the project area: the Scapegoat Wilderness Area and the Bob Marshall Wilderness Area. These wilderness areas each exceed 5,000 acres and as such, are considered Federal Class I Areas that ultimately receive protection under the Federal Clean Air Act of 1977.

No Action

Under the No Action Alternative, no slash piles would be burned within the project areas. Thus, there would be no effects to air quality within the local vicinity and throughout Airshed 3B.

Action

Under the Action Alternative, slash piles consisting of tree limbs and tops and other vegetative debris would be created throughout the project area during harvesting. These slash piles would ultimately be burned after harvesting operations have been completed. Burning would introduce particulate matter into the local airshed, temporarily affecting local air quality. Over 70% of emissions emitted from prescribed burning is less than 2.5 microns (National Ambient Air Quality PM 2.5). High, short-term levels of PM 2.5 may be hazardous. Within the typical column of biomass burning, the chemical toxics are: Formaldehyde, Acrolein, Acetaldehyde, 1,4 Butadiene, and Polycyclic Organic Matter.

Burning within the project area would be short in duration and would be conducted when conditions favored good to excellent ventilation and smoke dispersion as determined by the Montana Department of Environmental Quality and the Montana/Idaho Airshed Group. Prior to burning a "Prescribed Fire Burn Plan" would be done for the area. The DNRC, as a member of the Montana/Idaho Airshed Group, would burn only on approved days. Thus, direct and indirect effects to air quality due to slash pile burning associated with the proposed action would be minimal.

Burning that may occur on adjacent properties in combination with the proposed action could potentially increase cumulative effects to the local airshed and the Class I Areas. Plum Creek Timber Company participates as an Airshed Cooperator and operates under the same Airshed Group guidelines as the DNRC. Thus, cumulative effects to air quality due to slash pile burning associated with the proposed action would also be expected to be minimal.

Harvesting and log hauling could create dust which may affect local air quality. Harvesting operations would be short in duration and could occur during the winter months that would minimize dust dispersal. Thus, direct, indirect, and cumulative effects to air quality due to harvesting and hauling associated with the proposed action would be minimal.

7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

EXISTING CONDITION

RARE PLANTS AND WEEDS

Although the sensitive plant Howell's Gumweed (*Grindelia howellii*) occurs in the general area, no plants have been noticed within the project area. The Montana Natural Heritage Program (MNHP) was contacted, and the locations of species of concern were taken into account for this sale. This plant has been noted before on DNRC parcels within the Clearwater State Forest and has been successfully managed around. Noxious weeds such as knapweed occur along County and forest roads. Spot infestations of knapweed were treated along roadsides in June of 2006.

STANDARD VEGETATIVE COMMUNITY

The project area consists primarily of cover types of ponderosa pine, Douglas-fir/western larch, and lodgepole. All of these cover types have a component of lodgepole pine. Most of the project area is in the sawtimber size class and has low to high total stocking. Stands within the project area currently have a high susceptibility and risk of mountain pine beetle damage, based on the species, age, stand density, elevation, and existing mountain pine beetle presence. Lodgepole pine within the project area are dead, infested, or at risk, as are the ponderosa pine stands within the area.

At the larger scale, DNRC lands managed by the Clearwater Unit are approximately 85% forested, mostly in the ponderosa pine and western larch/Douglas-fir cover types. Compared to the desired future condition at this scale, Douglas-fir, subalpine fir, and mixed-conifer cover types are slightly over-represented while ponderosa pine and western larch/Douglas-fir are slightly under-represented. Overall, however, about 84% of these lands do have a cover type that matches the desired future condition. This area falls within climatic section 332B, which was historically about 79% forested. Within the climatic section, the historically dominant cover type was lodgepole pine, followed by Douglas-fir and ponderosa pine on lower slopes (Losensky, 1997).

Stand structure characterizes stand development, disturbance and how a stand may continue to develop. Stand structure is classified as single storied, two storied, or multi-storied if there are one, two, or three main canopy layers, respectively. Prior to the infestation by mountain pine beetle, the Bugchuck Project Area was dominated by single storied (southwest corner of section 36), two storied (remainder of 36), and multi-storied stands (section 31 and 6). The last structures mentioned are probably the result of past harvesting. Across the Clearwater Unit there is a more even distribution of the various stand structure types.

DNRC has adopted old-growth definitions based on Green et al. (1992). Most stands that are used to create units for this sale have ages that are between 40 and 149 years of age. Three stands that meet the age requirement for old growth specified by Green et al (1992), but they do not meet the trees per acre to requirement specified to qualify them as old growth. Therefore, no stands within the project area have met the definition of old growth based on Green et al. (1992).

The lodgepole pine that have been infested by mountain pine beetle have ages ranging between 40 years to 100 years. None of these stands have been affected by other diseases or insects. Several DNRC timber sales have been done in the Woodchuck area of section 6, and section 31 was owned by Champion International at one time. In all cases, the lodgepole stands developed as an understory component that was "logged over" or did not make a merchantable stem at that time. Within section 36, the occurrence of the lodgepole stands came as a result of wildfires that burned up the Blanchard Creek drainage and through Woodchuck canyon. These fires occurred in the early 1900's and are well displayed by the relic western larch that occur in the Blanchard Creek area in section 36 and the nearly completely burned snags and stumps within the southwest portion of the section. The area in the southwest corner of section 36 has not been harvested while the other areas have seen some harvest even if it was to remove larger western larch. The surrounding areas that also have lodgepole stands are or have been harvested on other ownerships within the Blanchard Creek and Woodchuck Canyon areas. Much of the harvest on Plum Creek ownership has removed other species as well.

No Action

No harvest would occur at this time. Compared to the existing condition, no immediate changes would be expected. Mountain pine beetle would likely continue to infest and kill lodgepole and ponderosa pine within the DNRC ownership and surrounding area. The increased fuel loading within these stands could become a concern as these trees die. With the existing rate of infestation, and the likelihood that dead trees will be blown down, openings would occur within the stands regardless of harvest. As the attack of these beetles is a natural event, it is conceivable that the sale area has experienced it in the past. Over time, some natural conifer regeneration would probably establish in areas with a seed source and favorable microclimate. Weed treatment could occur as funding allows.

Action

The silvicultural plan is to remove recently killed and green lodgepole pine. This would remove trees that are being, or have been attacked by the mountain pine beetle, and trees within an area that are highly susceptible to the beetle attack. These areas will be more open than they are currently. Changes to the vegetation would include an immediate reduction in numbers of live and dead lodgepole pine. Other species, including ponderosa pine, western larch, and Douglas-fir would be retained. The remaining trees would have increased growth as more resources would be available per tree. At the larger scale, the proposed harvest in combination with other current and potential salvage projects would reduce stand density on less than 1% of the area managed by the Clearwater Unit.

Fuel loading concerns within these stands would decrease. Reduction of the standing stems by the harvest of trees would reduce standing fuels. Piling of logging slash created by this project at the landing within the stand would reduce slash fuel concerns. This piling "consolidates" slash that would be at the harvest landing or still within the logging unit into smaller piles throughout the stand. This creates a situation where the DNRC is able to burn the fuel created, do it safely with fewer people, and it will create small openings that can support seedlings.

While regeneration is not a goal of the harvest prescription, some lodgepole pine, Douglas-fir, and western larch would likely become established through natural regeneration in openings and in the areas where logging slash is piled and burned. Planting of the proposed harvest units with seral species such as western larch and ponderosa pine would be planned and could happen within two years of harvest. These species are less likely to be affected by mountain pine beetle in the future.

To prevent introduction of new weeds, off-road equipment would be cleaned and inspected prior to entry into harvest areas. Newly disturbed roads and landing would be seeded to grass. Roadsides with existing weeds would be treated with herbicide. The proposed action would be expected to result in no measurable direct, indirect, and cumulative impacts on forest vegetation.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

The following species were considered but eliminated from detailed study due to lack of habitat present: Peregrine Falcon, Common Loon, Harlequin Duck, Townsend's Big-eared Bat, Coeur d'Alene Salamander, Northern Bog Lemming, Mountain Plover, and Columbian Sharp-tailed Grouse.

Bald Eagle—The proposed action and associated hauling route would be located >1.25 mile from the nearest active bald eagle nest, with topographic relief between the known nest site and project area. As a result, there would likely be low risk of direct, indirect, or cumulative effects to bald eagles as a result of the proposed action.

Fisher—The proposed action would salvage lodgepole pine within 221 acres of potential fisher habitat, primarily along Blanchard Creek. As per ARM 36.11.440 (1)(b), the proposed action would retain fisher habitat within 100 feet of Blanchard Creek, a class 1 stream, maintain 75% of the acreage in the sawtimber size class in moderate to well-stocked density (i.e., >40% crown cover), and retain large snags and coarse woody debris pursuant to ARM 36.11.406 through 36.11.414. Using pre-cruise collected data in the Stand Visualization System (SVS, as part of the MT Cruiser program), simulations of post-harvest crown cover indicate each harvest unit would likely have >36% crown cover post-harvest through a species-designated harvest of lodgepole pine. As a result, there would likely be low risk of direct, indirect, or cumulative effects to fisher as a result of the proposed action.

Flammulated Owl—The proposed action would harvest approximately 25% of the standing volume within all of the harvest units, through a species-designated harvest of lodgepole pine. Western Larch, ponderosa pine, and Douglas-fir would be retained post-harvest, and typically clumpily distributed throughout the harvest units. These distributions would be beneficial for flammulated owls because the proposed harvest would likely spur forest regeneration in the clearings, while retaining larger diameter snags and snag recruits for nesting. As a result, the proposed action would likely have low risk of direct, indirect, or cumulative effects to flammulated owls.

Pileated Woodpecker—The proposed action would remove only lodgepole pine from the proposed harvest units. Based upon the pre-cruise data, trees proposed for harvesting would be approximately 16 inches DBH and less, with other species remaining post-harvest with DBH ranging between seedlings and 27 inches. Additionally, post-harvest crown cover would likely range between 36 and 65%, based on post-harvest estimates from the Stand Visualization System (SVS, as part of the MT Cruiser program). With estimated post-harvest retention levels, there would likely be low risk of direct, indirect, or cumulative effects to pileated woodpeckers as a result of the proposed action.

Black-backed Woodpecker—Within an approximately 25 mile radius, approximately 83,000 acres of forest burned in 2007 on four large fires. Due to the abundance of newly burned habitat, and this species' affinity for burned areas, the proposed harvest of approximately 219 acres of bug-killed lodgepole pine would likely have low risk of direct, indirect, or cumulative effects to black-backed woodpeckers.

Big Game Winter Range—There is concern that the proposed harvest would negatively effect big game winter range for elk and white-tail deer. Currently, only two proposed harvest units (units 2 and 3) have a "satisfactory" (>70%) estimated (based on SVS simulations using pre-cruise data) crown cover, while the other three proposed harvest units have an estimated crown cover that provides "marginal quality" thermal cover (40% to 70% canopy cover). The proposed action, based upon pre-cruise data, would harvest approximately 25% of the standing volume of trees, and would have estimated post-harvest crown cover ranging between 36% and 65% in the proposed harvest units. Only one proposed harvest unit, unit 5, would have estimated post-harvest crown cover below 40%. Based upon the post-harvest tree retention levels, and the clumpy spatial distribution of those patches, there would likely be low to moderate risk of direct, indirect, and cumulative effects to big game winter range for white-tail deer and elk.

Fisheries-

Blanchard Creek is designated a high-value fisheries resource by MFWP. Westslope cutthroat trout, Rainbow trout, Brook trout, and likely Bull trout are year-round residents upstream of an irrigation diversion at river mile 1.1, which is within the project area.

With no action, no road construction or timber harvest would occur, yet current sediment sources would continue. The no-action alternative would not have any effects to stream shading, stream temperature, LWD recruitment, or other fish habitat features.

Under the action alternative there is a low risk of direct and indirect to fisheries in Blanchard Creek with the proposed timber harvest and road construction. As disclosed in the Hydrology Analysis, only existing crossings of Blanchard Creek would be used and the new access road would be constructed away from riparian areas and presents low risk of off-site erosion or sedimentation. The action alternative is designed to minimize impacts to water quality, fisheries, and maintain or improve stream conditions important to fish habitat. Streams would be protected by designating stream (SMZ), riparian (RMZ's) and wetland protection zones (WMZ's) as defined by ARM for State Forest Land Management rules to ensure adequate buffer function adjacent to the stream. No harvest would occur within the SMZ adjacent to Blanchard Creek which would not effect potential large woody recruitment to streams. Selective harvest would occur within a short segment of the Riparian Management Zone, which extends from 50 feet to 100 feet away from the stream.

Cumulative effects of sediment delivery from roads would be slightly reduced by restoring road drainage features as part of BMP implementation that would reduce sedimentation and maintain or improve fish habitat. No measurable change in stream shading or LWD would occur that could increase in stream water temperature or impacts to potential fish habitat are expected to occur as a result of the proposed action alternative.

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

Grizzly Bear and Gray Wolf—The proposed action would reduce standing volume within the affected area by approximately 25% and construct new road to access harvest unit 3. However, the proposed action would not increase open road density post-harvest. Because proposed harvest units 1 and 2 are visible from the main Blanchard Creek Rd., grizzly bears and wolves may be vulnerable due to reduced visual screening. However, within harvest unit 1, crown cover would likely be reduced from approximately 59% to approximately 41%, while retaining structural diversity among non-lodgepole pine tree species, and crown cover within harvest unit 2 would be reduced from an estimated 83% to an estimated 60%. Thus, there would likely be post-harvest visual screening cover for grizzly bears and wolves within these two proposed harvest units. As a result, there would likely be low risk of direct, indirect, or cumulative effects to grizzly bears and wolves as a result of the proposed action.

Canada Lynx—Current Stand Level Inventory data (release 28 September 2006) indicate that lynx habitat does not occur within the affected parcels. Because habitat does not currently exist within the affected parcels, there would likely be low risk of direct, indirect, or cumulative effects to lynx from the proposed action.

Fisheries

Bull trout and westslope cutthroat trout— Bull trout and westslope cutthroat trout are identified as Class-A Species of Concern in Montana. Bull trout are identified as a "threatened" species by the US Fish and Wildlife Service. Bull trout were not detected in a recent 2007 stream survey by MTFWP, but may still occur within the Blanchard drainage considering the watershed is within their historic range. The DNRC Forest Management Program has also identified bull trout and westslope cutthroat trout as Sensitive Species under ARM 36.11.436. A low risk of direct, indirect and cumulative impacts to westslope cutthroat trout or bull trout is expected to occur under the proposed action alternative (see Section 8 – Fisheries for more information regarding potential impact to fisheries).

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

Identify and determine effects to historical, archaeological or paleontological resources.

The Montana D.N.R.C. archeologist reported that there are not any cultural resources on file for this state parcel, and no further investigation was needed.

11. AESTHETICS:

Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

Any change to the scenery in the area from these alternatives would be in addition to past timber harvests, road building, vegetation management (grazing, pre-commercial thinning, etc.) and future fire activity within the project area. This analysis includes all past and present effects.

No Action

If the no action alternative is selected, patches created by dead trees will exist. Potentially these openings will be more or less acreage given the insect outbreak timeline. The trees that would be killed by the beetle attack would lose all foliage, and eventually branches (over several years). Although the tree bole would still be in existence, this would not be very apparent in the distance, but would be more easily seen within the middleground viewshed. The color would be lighter than the current view after the attacked trees die. Thus, direct, indirect, and cumulative effects to aesthetics would be minimal.

Action

The proposed sale would be partially visible from Highway 200 in the Clearwater Junction area, and portions of this project are proposed that are adjacent to the Blanchard Creek County Road. Only portions of the harvest units would be visible from any of these locations, and in many instances, the openings created would be minimal. Large portions of the proposed harvest units would be blocked from view by

topography or by vegetation. The removal of bark beetle attacked trees could change the middleground view from Blanchard Creek Road and the background view from Highway 200 from the present condition. Proposed harvest stands within section 36 (portions are visible from both road systems) are comprised of lodgepole pine in many areas. These areas would then appear clear cut but would be broken by patches of residual timber. These areas harvested would be planted with a mix of western larch, ponderosa pine, and Douglas-fir. Over the long term, these areas would be noticed by the absence of tree crowns, occurrence of regeneration, and potential change in species present.

Through the proposed sale area, slash from the harvest would be noticeable yet temporary. Generally slash disappears from the site within five years, and is often covered by other vegetation within three years. Again, sites would be generally lighter in color than can be seen currently.

Harvest systems and activities would be ground-based and could be done during the winter while many people would not be traveling the Blanchard Creek road. Should some of the proposed units be harvested during the summer, the skidding equipment and the need for log trucks to haul the logs away from the landings, may cause temporary dust clouds that will quickly disperse and would only occur during harvest. Harvest activities would be quite audible, and, depending upon air conditions, equipment could be heard many miles from their location. The proposed harvest of this volume would most likely be done within several months and would occur during the general "work week". Direct, indirect, and cumulative effects to aesthetics due to harvesting and hauling associated with the proposed action would be minimal.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

There are no demands by this project on environmental resources of land, water, air, or energy.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

Clearwater River I, II, and III Timber Sale (EA 1999), Woodchuck Timber Sale (1995), Blanchard Woodchuck Timber Sale (1985), Woodchuck pre-commercial thin (planned for 2008).

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" if no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

No risks to human health and safety are known as part of this project. Safety considerations and temporary risks would increase for the professional contractors working within the sale area, and possibly for public vehicle traffic on roads while log trucks are hauling.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

Identify how the project would add to or alter these activities.

This proposed project would capitalize on timber resources that would otherwise be lost after being attacked by the mountain pine beetle. As part of MCA 77-5-207, the DNRC is required to consider long-term costs to all forest resources that could be controlled through salvage operations. It is also stated that the DNRC will not let the salvage operations take precedence over the timely sale and harvest of green timber. The salvage of material must be done prior to substantial loss of value or material. Given these requirements, the DNRC must ensure that harvest is economically feasible. This projected harvest volume is fairly minor (estimated at less than 20%) as compared to the board foot volume within this project given stand level inventory. This project would not decrease the opportunity to perform future harvest in the area. The grazing leases and recreational permits within these sections would not be affected by this proposed project.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

A few short-term jobs in the local area may be created for the duration of the proposed action. Due to the relatively small size of the timber sale, there would be no measurable cumulative impact from this proposed action on employment.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

The proposed action has only indirect, limited implications for tax collections.

18. DEMAND FOR GOVERNMENT SERVICES:

Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services

Aside from contract administration, the impact on government services should be minimal due to the temporary nature of the proposed action.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

The DNRC operates under the State Forest Land Management Plan (SFLMP, DNRC 1996) and Administrative Rules for Forest Management (ARM 36.11.401 through 450, DNRC 2003). The SFLMP established the agency's philosophy for management of forested trust lands. The Administrative Rules provide specific guidance for implementing forest management projects.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

Blanchard Creek flows through the project area. The Blanchard Creek County Road passes through section 36 of the salvage sale, and the sections are open for public recreation. The project area receives use by walk-in recreationists, fishermen, "mountain" bicyclists, and hunters. Recreation opportunities would continue under the proposed action. Fuel treatment would be done in such a manner to reduce fuel concentrations and decrease available fuels adjacent to the Blanchard Creek road. Slash would be piled away from landings by grappled machines ("skidder piling") away from roads on all units and would be burned by DNRC personnel in the future. This action is proposed to decrease the slash hazard on site, and still allow easier access to the sale area by foot.

There is not a wilderness within the Blanchard Creek or Woodchuck Canyon areas, and therefore, one would not be affected.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

The project has no measurable direct, indirect, or cumulative implications for density and distribution of population and housing.

22. SOCIAL STRUCTURES AND MORES:

Identify potential disruption of native or traditional lifestyles or communities.

The proposed action has no measurable direct, indirect, or cumulative implications for social structures and mores.

23. CULTURAL UNIQUENESS AND DIVERSITY:

How would the action affect any unique quality of the area?

The proposed project has no measurable direct, indirect, or cumulative implications for cultural uniqueness and diversity.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

No Action: Grazing on all of the sections would continue to provide annual revenue of \$1,221.44. In addition, the current Special Use Recreational License for Section 31 would continue to generate annual revenue of \$1,181.16 through the year 2009.

Action: Revenue from grazing and recreation would continue. The timber harvest would generate additional revenue for the Common Schools Trust and the State Industrial School. The estimated return to the trust for the proposed harvest would be \$30,000 to \$80,000 based on an estimated harvest of 400 thousand board feet and an overall stumpage value of \$75.00 to \$200.00 per thousand board feet (MBF). This is equivalent to \$12.50 to \$33.33 per ton. Recent past sales on the Clearwater Unit designed to salvage lodgepole pine (Confusion Salvage, Hidden Bugs Salvage, and Still Cool Bugs) have sold for sawlog stumpage prices (paid to the DNRC) of \$42.57/ton, \$35.93/ton,

and \$22.60/ton respectively. These three sales used or will use standard logging equipment (skidder, feller bunchers, etc.) to harvest and yard the material to landings. These prices also show the general decrease in stumpage costs scene in the area recently. The proposed Bugchuck sale would involve more road construction and might decrease the stumpage paid to DNRC. Given that markets change and the cost of diesel fuel changes, and the softwood supply can change, it is believable that the money received by the Trust could vary from the estimate.

Costs related to the administration of the timber sale program are only tracked at the Land Office and Statewide level. DNRC doesn't track project-level costs for individual timber sales. An annual cash flow analysis is conducted on the DNRC forest product sales program. Revenue and costs are calculated by land office and statewide. The most recent revenue-to-cost ratio of the Southwestern Land Office was 2.43. This means that, on average, for every \$1.00 spent in costs, \$2.43 in revenue was generated. Costs, revenues, and estimates of return are estimates intended for relative comparison of alternatives. They are not intended to be used as absolute estimates of return.

The money collected for forest improvement projects would be around \$3.79 per ton. This should return approximately \$1,516.00 for forest improvement uses. Forest improvement projects include planting, thinning, burning, etc. on School Trust Land.

EA Checklist Prepared By:	Name: Craig V. Nelson	Date: March 17, 2008
	Title: Supervisory Forester, Clearwater State Forest, SWLO	

V. FINDING

25. ALTERNATIVE SELECTED:

The Action Alternative

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

This Environmental Analysis has been completed for the Bugchuck Salvage Sale. After a thorough review of the EA, project file, response to both scoping letters, Department policies, standards and guidelines, and the State Land Management Rules, I have taken the decision to choose the action alternative. I have found that this EA and project will:

Salvage dead and dying timber before it loses its economic value. This is explained in This is explained in EA part 3 *Alternatives Considered*, EA part 15 *Industrial, Commercial, and Agriculture Activities and Production*, EA part 24 *Other Appropriate Social and Economic Issues*, and is required by law in MCA 77-5-207 -Salvage timber program.

This project will reduce the susceptibility of residual trees to epidemic insect infestations and outbreaks. This is explained in EA part 7 *Vegetation Cover, Quantity, and Quality*. This project would also plant trees native to the area (western larch and ponderosa pine) after harvest to decrease similar concerns in the future.

Through treatment, this area will see decreased fuel levels and hazards. This project will help reduce fuels within the project area. This is explained in EA part 7 *Vegetation Cover, Quantity, and Quality* and EA part 20 *Access To and Quality of Recreational and Wilderness Activities*.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

☐

EIS

☐

More Detailed EA

☒

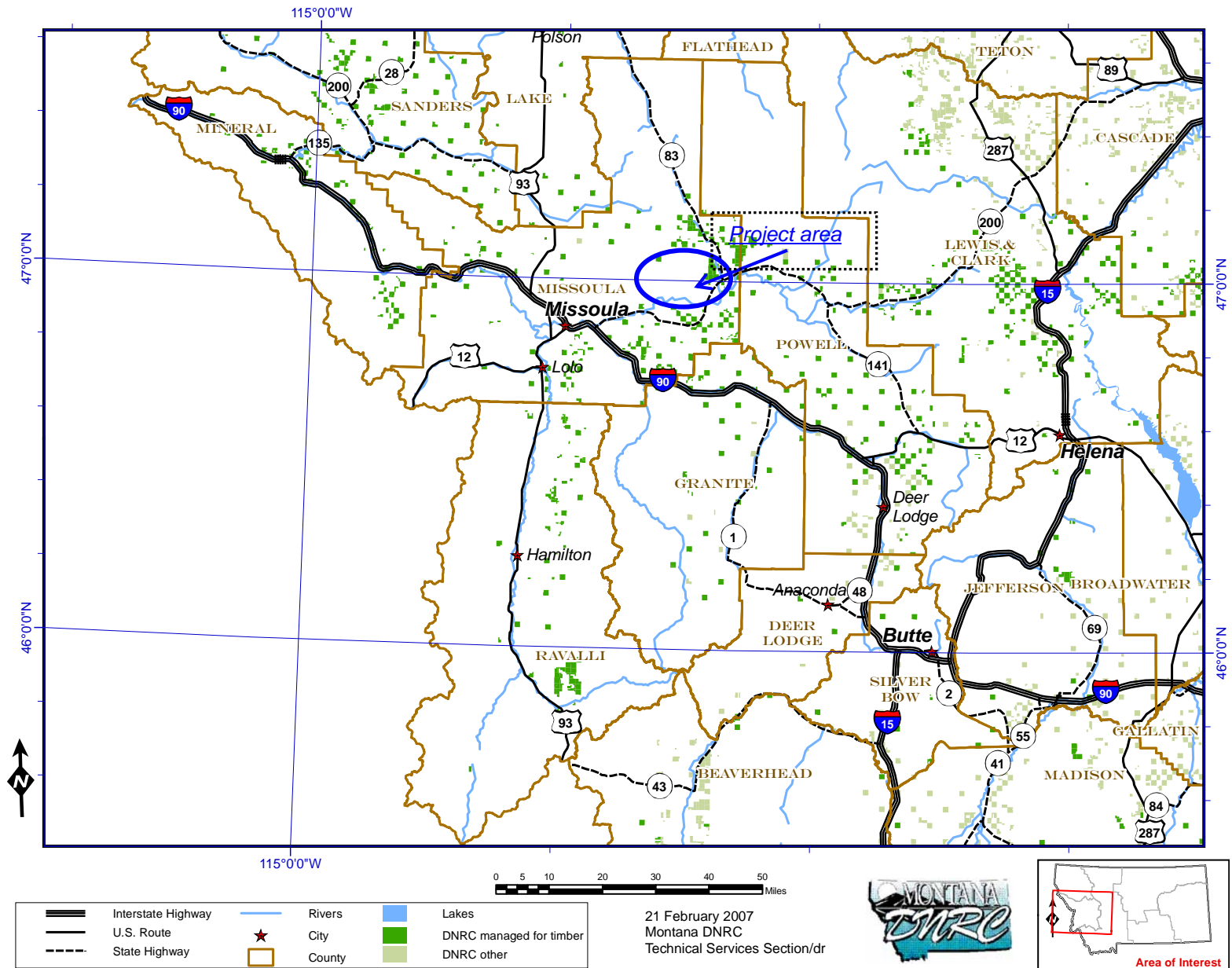
No Further Analysis

EA Checklist Approved By:	Name: Stephen J. Wallace
	Title: Unit Manager, Clearwater State Forest, SWLO
Signature: /s/ Stephen J. Wallace	Date: 3-19-08

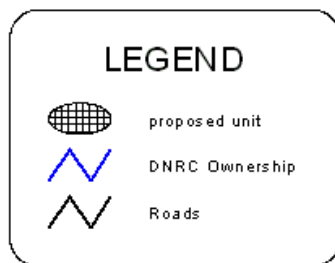
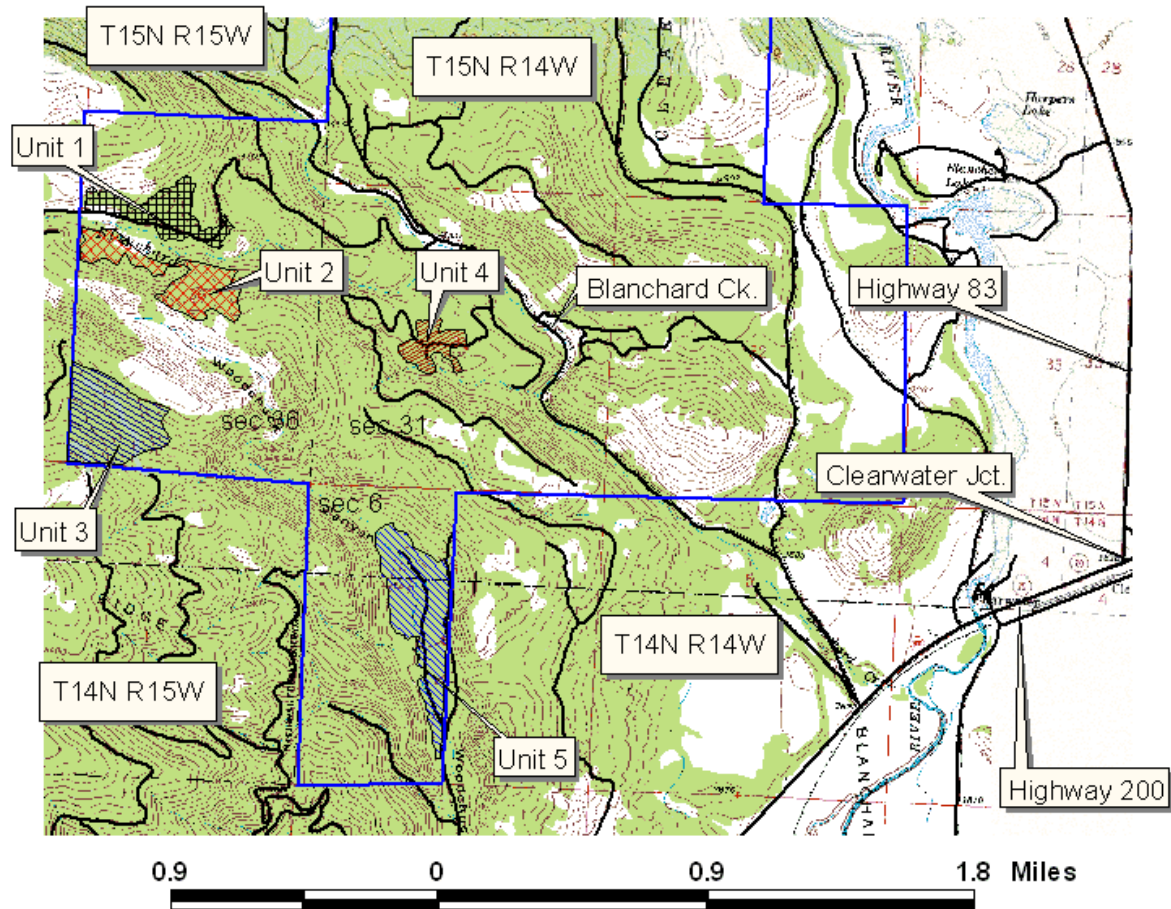
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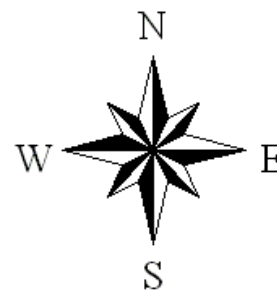
PROPOSED BUGCHUCK SALVAGE SALE



BUGCHUCK SALVAGE PROPOSED HARVEST UNITS

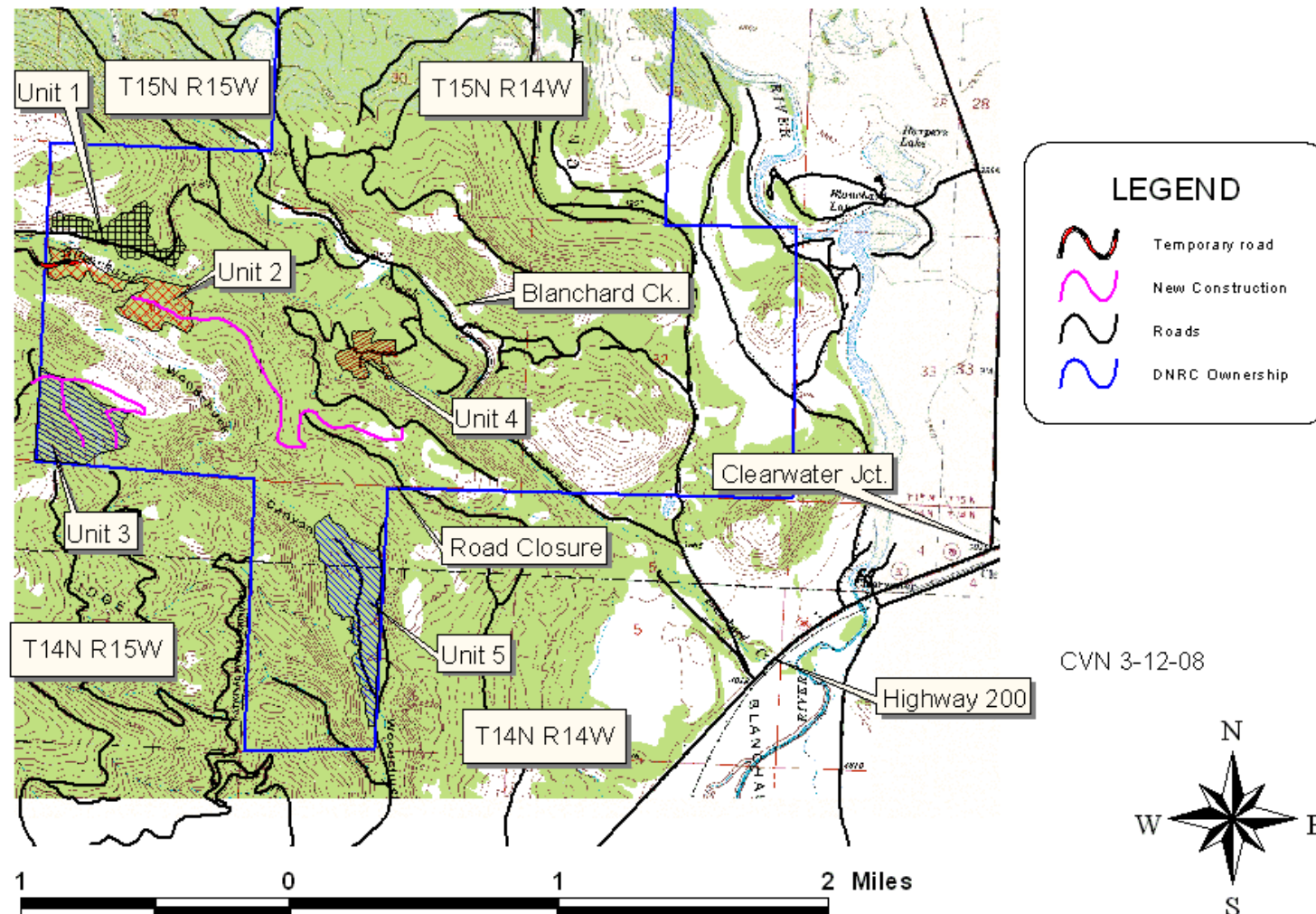


CVN 2-12-08



ATTACHMENT A-2

PROPOSED ROADS FOR BUGCHUCK



APPENDIX B
RECOMMENDED MITIGATION MEASURES FOR
THE PROPOSED PROJECT

RECOMMENDED MITIGATION MEASURES FOR THE PROPOSED PROJECT:

- * Implement Forestry BMP's and Forest Management Rules as the minimum standard for all operations with the proposed timber sale. The contractor and sale administrator should agree to a general skidding plan prior to equipment operations.
- * New road segments would be constructed on suitable grades of preferably 8% or less. Install adequate road drainage such as drain-dips to control erosion concurrent with harvest activities and road construction and reconditioning.
- * Limit equipment operations to periods when soils are relatively dry (less than 20%) frozen or snow covered to minimize soil compaction and rutting, and maintain drainage features. Check soil moisture conditions prior to equipment start-up.
- * Tractor skidding would be limited to slopes less than 45% in the NE corner of the parcel to protect growing sites. Short steep slopes may require a combination of mitigation measures based on site review, such as adverse skidding to ridge, winch line skidding, or packing the logs with harvester to more moderate slopes less than 45%.
- * Down Woody Material: Retain 5-10 tons large woody debris and a large portion of fine litter following harvest where feasible for nutrient cycling. This may be accomplished removing limbs and tops prior to skidding or return skidding slash and distributing on skid trails and evenly within the harvest area.
- * On this gentle ground, slash distributed on trails or temporary roads would be adequate to control erosion and prevent unauthorized use.
- * Weed Management: All road construction and harvest equipment will be cleaned of plant parts, mud and weed seed to prevent the introduction of noxious weeds. Equipment will be subject to inspection by forest officer prior to moving on site. All newly disturbed soils on road cuts and fills will be promptly reseeded to site adapted grasses to reduce noxious weed encroachment and stabilize roads from erosion.

APPENDIX C
INITIAL PROPOSAL

May 22, 2007
Initial Proposal
Bugchuck Salvage Sale

The Montana Department of Natural Resources and Conservation, Clearwater Unit, is proposing a timber sale on State – owned portions of the following school trust lands:

Section 36 T.15N., R.15W. - *Common School*
Section 31 T.15N., R.14W. - *Common School*
and,
Section 6, T.14N., R.14W. - *State Industrial School*

The primary objective of this proposal is to salvage harvest lodgepole pine that has been, is currently, or will likely be, infested with the mountain pine beetle. Approximately 1.5 miles of road would be needed to access the unroaded portions of the proposed area. Harvest operations would be done in a manner consistent with the Montana D.N.R.C.'s mandate to produce revenue for the school trust. All actions taken would be in accordance with the Enabling Act, the Montana Environmental Policy Act, the State Forest Management Plan, and to contribute to the DNRC's sustained yield as mandated by State Statute 77-5-222, MCA. Recently beetle killed and beetle infested trees would be salvaged. Additionally, other live lodgepole trees within harvest units would be cut in order to reduce the potential spread of the beetle population. Dead trees that no longer can be turned into wood products would be left as wildlife trees. Other species (Douglas-fir, ponderosa pine, western larch, etc.) would be left provided they are not on newly constructed roads, skid trails or landing areas.

The area is known to provide habitat for White-tailed and Mule deer, Elk, Moose, Mountain Lion, Black and Grizzly Bears.

This proposed sale could harvest up to 1 million board feet of timber. The proposed action is projected to be implemented in late fall of 2007 and would likely be finished by 2009.

In preparation for this timber sale, resource and technical specialists (such as wildlife biologists, hydrologists, soil scientists, and archeologists) would be consulted.

The Montana D.N.R.C. invites comments and suggestions concerning this proposal from all interested parties. Please respond by June 27, 2007.

Route all responses to:

Craig V. Nelson
Department of Natural Resources and Conservation
Clearwater Unit
48455 Sperry Grade Road
Greenough, MT.
59823-9635

or: crnelson@mt.gov
or: (406) 244-5857

Copies of the letters received from the Montana DFWP, F.H. Stoltze Land and Lumber, and the Wild West Institute are available by requesting them from the Clearwater Unit office at the below address.

Clearwater Unit
ATTN: Craig V. Nelson
48455 Sperry Grade Rd.
Greenough, MT.
59823-9635

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MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

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